

## Study Guide

Student Edition  
Pages 346–353**Exploring Similar Polygons**

Two polygons are **similar** if and only if their corresponding angles are congruent and the measures of their corresponding sides are proportional.

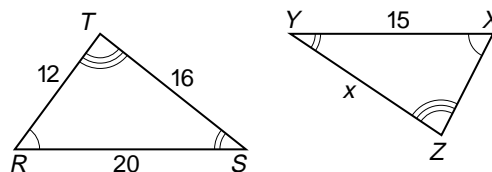
The symbol  $\sim$  means *is similar to*.

The ratio of the lengths of two corresponding sides of two similar polygons is called the **scale factor**.

**Example:** Find  $x$  if  $\triangle RST \sim \triangle XYZ$ .

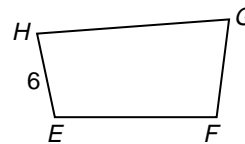
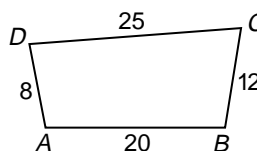
The corresponding sides are proportional, so we can write a proportion to find the value of  $x$ .

$$\begin{aligned}\frac{16}{x} &= \frac{20}{15} \\ 20x &= 240 \\ x &= 12\end{aligned}$$



If quadrilateral  $ABCD$  is similar to quadrilateral  $EFGH$ , find each of the following.

1. scale factor of  $ABCD$  to  $EFGH$



2.  $EF$

3.  $FG$

4.  $GH$

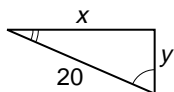
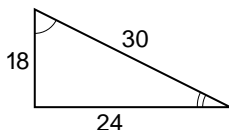
5. perimeter of  $ABCD$

6. perimeter of  $EFGH$

7. ratio of perimeter of  $ABCD$  to perimeter of  $EFGH$

Each pair of polygons is similar. Find the values of  $x$  and  $y$ .

8.



9.

